

## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

REC'D 26 MAY 2004

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Applicant's or agent's file reference P.PURA.17WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/BE 03/00062	International filing date (day/month/year) 07.04.2003	Priority date (day/month/year) 05.04.2002
International Patent Classification (IPC) or both national classification and IPC A21D8/04		
Applicant PURATOS		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  28.10.2003	Date of completion of this report  25.05.2004
Name and mailing address of the International preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Piret-Viprey, E  Telephone No. +31 70 340-1039  

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International application No. **PCT/BE 03/00062**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-27 as originally filed

**Claims, Numbers**

1-22 as originally filed

**Drawings, Sheets**

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	3,20
	No: Claims	1,2,4-19,21,22
Inventive step (IS)	Yes: Claims	
	No: Claims	1-22
Industrial applicability (IA)	Yes: Claims	1-22
	No: Claims	

2. Citations and explanations

**see separate sheet**

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Item V

The following documents (D1-D11) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1: DD-A-156714  
D2: Bäcker und Konditor (1984), 32(1), 22-24  
D3: WO-A-0174169  
D4: GB-A-375342  
D5: US-A-3561975  
D6: EP-A-1186658  
D7: GB-A-906344  
D8: RU(A) 2177994)  
D9: US-A-5569599  
D10:US-A-5124261  
D11:US-A-5714373

1 - The present application does not meet the requirements of Article 33(2) because the subject-matter of claims 1,2,4-19,21,22 is not new.

- D1 describes (on p.1, par.1 and claim 1) a process for the preparation of a heat-stable thermitase by culturing Thermoactinomyces vulgaris. The enzyme preparation is suitable for weakening of gluten in preparation of wafers or other cereal or bakery products.

The subject-matter of claims 1,4,6,7,10,13-16,18 is therefore not new.

- D2 describes wafer doughs prepared from wheat flours containing 25-30.5% gluten, 13-14% water and 12-13% protein, with addition of various enzyme preparations: thermitase, thermitase and alpha-amylase, Veron P, alkaline protease.

The subject-matter of claims 1,6,8,10,14,15,17,18 is therefore not new.

- D3 discloses in examples 1-4 a biscuit dough prepared with usual ingredients and an

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enzyme premix comprising papain, alkaline protease, soy flour and wheat flour.  
The formulation used in the examples comprises also lecithin.  
D1 indicates also on p.10, l.6-8 that for 100g of blend of wheat flour and soya flour, there is 36 to 60 Tyrosine units of papain and 3 to 6 Tyrosine units of alkaline protease.

The subject-matter of claims 1,5,8-10,17,18 is therefore not new.

- D4 discloses in claim 1 the incorporation in a bread dough of papain as a gluten softening agent.

The subject-matter of claims 1,9,10,18 is therefore not new.

- D5 describes in example I and claims 1 and 4 a shortening-coated protease (substantially spherical particles) used as an ingredient in pie dough.  
Claim 6 of D3 indicates that the spherical particles comprise additionally an emulsifier.

The subject-matter of claims 1,8,10,17,18 is therefore not new.

- D6 describes in example 1 and claim 1 an enzyme solution with proteolytic activity obtained by cultivating a bacterium of the genus *Bacillus*, the enzyme solution having heat-resistant peptidase activity. Example 10 of D4 indicates the introduction of this solution in a dough for the preparation of bread.

The subject-matter of claims 1,2,4,9,10,13,18 is therefore not new.

- D7 describes on p.1, l.14-35 and in claim 1 an anti-staling bread additive comprising one fat or oil and at least one proteolytic enzyme (from *B. subtilis* or *A. oryzae*).

The subject-matter of claims 1,4,8-10,13,17,18 is therefore not new.

- D8 describes the production of keratinase from *Bacillus licheniformis*, which can be used in aviculture and animal husbandry, in leather and food industry.

The subject-matter of claims 10,14-16,19,21,22 is therefore not new.

- D9 describes in claims 1 and 2 an isolated enzyme composition containing keratinase

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which has an optimum temperature at a pH 10 in a range of 70 to 90°C.

The subject-matter of claims 10-15 is therefore not new.

- D10 describes in col.1, l.34-52 and col.8, l.31-51 a process for the production of aqualysin I employing a genetic engineering procedure, more efficient than the conventional procedure by cultivating *Thermus aquaticus*.

The subject-matter of claims 10,11,13-15 is therefore not new.

- D11 describes in col. 2, l.1-14 and example 2 the isolation and identification of a protease from *Thermococcus*. The protease has an optimum temperature range of between about 60°C and about 90°C.

The subject-matter of claims 10,11,13 is therefore not new.

2 - Dependent claim 3 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, the reasons being as follows:

in claim 3 a slight constructional change in the method of claim 1 is defined which comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen,

3 - The invention of claim 20 consists merely in the use of keratinase in a specific food application: the baking process of bakery products. This use does not involve more than employment of properties of the material which are already known: keratinase is known from D8 as used in food industry and from D9 as a thermostable enzyme.

Hence, no inventive step is present in the subject-matter of claim 20.